

derivatives

2014-10-21 day 39

3.5 problems to watch out  
for 3.5  
7-40 is practice,  
3.5/ 5-6, 43-44 do them  
(finding eqn of tangent line),  
59, 61, 62, 65, 67, 68

ASHLEY=NOOB

$$\frac{d}{dx}(C) = 0$$

$$\frac{d}{dx}(x) = 1$$

$$\frac{d}{dx}(x^n) = nx^{n-1}$$

$$\frac{d}{dx}(\sin x) = \cos x$$

$$\frac{d}{dx}(\cos x) = -\sin x$$

$$\frac{d}{dx}(\tan x) = \sec^2 x$$

$$\frac{d}{dx}(\sec x) = \sec x \tan x$$

$$\frac{d}{dx}(\cot x) = -\csc^2 x$$

$$\frac{d}{dx}(\csc x) = -\csc x \cot x$$

derivatives

$$\frac{3.5}{7} \int (x^3 + 2x)^{37}$$

$$x \mapsto x^3 + 2x \mapsto ( )^{37}$$

$$\frac{d}{dx} [(x^3 + 2x)^{37}] =$$

$$37(x^3 + 2x)^{36} \cdot \frac{d}{dx}(x^3 + 2x)$$

$$= 37(x^3 + 2x)^{36} (3x^2 + 2)$$

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Alexa's way

$$f(u) = u^{37} \quad u = v^3 + 2v = x^3 + 2x$$

$$g(v) = v^3 + 2v$$

$$v = x$$

$$\frac{d}{dx} [(x^3 + 2x)^{37}] =$$

$$37u^{36} \cdot (3v^2 + 2)$$

$$37(x^3 + 2x)^{36} (3x^2 + 2)$$

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Ashlee is  
Actually awesome  
+  
cant spell

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3.4/43)

Assume  $x$  is in degrees.

Then, the number of radians representing the same angle is  $x \cdot \frac{\pi}{180}$ .

$$\lim_{x \rightarrow 0} \frac{\frac{\pi}{180} \cdot \sin(x \cdot \frac{\pi}{180})}{x \cdot \frac{\pi}{180}} = \lim_{x \rightarrow 0} \frac{\pi}{180} \left( \frac{\sin(x \cdot \frac{\pi}{180})}{x \cdot \frac{\pi}{180}} \right) = \frac{\pi}{180} \cdot 1 = \frac{\pi}{180}$$

Q's  
awesome

middle  
first  $\Rightarrow$